EXECUTIVE SUMMARY

The Kissimmee Basin is one of four regional planning areas in the South Florida Water Management District (SFWMD). The Kissimmee Basin (KB) Planning Area covers approximately 3,500 square miles and includes those portions of Orange, Osceola, Polk, Highlands, Okeechobee, and Glades counties that lie within the SFMWD. The KB Planning Area shares common boundaries with the St. Johns River Water Management District and the Southwest Florida Water Management District.

The KB Planning Area is expected to experience significant growth in the urbanized areas of Orange and Osceola counties and moderate agricultural expansion in portions of Highlands, Glades, and Okeechobee counties. Agricultural water demand accounted for 75 percent of the overall water use in the KB Planning Area in 1995 at 308 MGD. This use is expected to increase by approximately 170 MGD through the planning horizon of 2020. During the same period, the region's population is projected to increase by 89 percent, from about 363,000 to almost 687,000 people, resulting in an increase of 85 MGD in urban use over the existing use of 98 MGD. The overall basin water demand is projected to increase by 63 percent to 662 MGD for the average condition through the planning horizon of 2020.

The KB Water Supply Plan has been prepared to meet the legislative requirements of the 1996 Governor's Executive Order 96-297 and the 1997 water supply planning provisions of Section 373.0361, F.S. The KB Water Supply Plan is based on a 20-year planning period and includes the following components:

- A water supply development component
- A water resource development component
- A prevention strategy related to minimum flows and levels
- A funding strategy
- Consideration of how the water supply and resource development components serve the public interest or save costs
- Technical data supporting the plan

This plan is intended provide a framework to address future water use decisions regarding current and future water supply for urban areas, agriculture, and the environment through the year 2020. The plan estimates the future water supply needs of urban and agriculture and weighs those demands against historically used water sources and the needs of the environment. Through this process, areas are identified where the projected demands may result in possible harm to the resource or environment. In those areas where there is a potential for harm to the environment, the plan evaluates alternative water source options to meet any unmet demand and makes recommendations towards their development.

The development of the KB Water Supply Plan began in 1994 with the collection of field data in support of the planning effort. In 1998, a public participation process was developed that provided for the completion of water use projections, collection of water source information, identification of basin issues, solution development and ultimately for the preparation of the planning document itself. As part of this public participation process, the District created the KB Water Supply Plan advisory committee consisting of representatives of agricultural, environmental and urban interests. This group met 17 times over the course of the plan development.

As part of the planning process, analyses of the basin resources were completed. These analyses performed in the development of this plan included ground water modeling, surface water management assessments, vulnerability mapping and a comparative evaluation. The ground water flow models developed for this plan were used to simulate the affects of projected 2020 water demands on the environment and ground water sources within the KB Planning Area. A surface water management assessment focused on the management issues associated with the Lake Istokpoga and Indian Prairie system of waterworks that supply agricultural uses in that area. Vulnerability mapping was used to identify areas where the potential is greatest for future harm to wetlands as a result of ground water withdrawals. Where data was the least available to complete a rigorous analysis, a comparative evaluation was performed to determine of possible movement of poor quality water and the increased potential for sinkhole occurrence.

Based on the results of these analyses, the basin was divided into northern and southern areas to focus on the issues that were identified. In the northern portion of the basin, continued ground water use to supply the projected population growth in Orange and Osceola counties was identified as the primary issue. In the southern portion of the basin, increased surface water use in the Lake Istokpoga-Indian Prairie Basin resulting from proposed agricultural expansion was identified as the primary issue of concern.

In Orange and Osceola counties, the analyses performed identified areas at higher risk for harm to wetlands, significant saline water movement and sinkhole formation as a result of increased ground water withdrawals. In addition, the plan identifies future withdrawals occurring in the basin may be contributing to the reduction of spring flows in Orange and Seminole counties. The analysis completed under this planning effort is limited to identifying areas of risk associated with future withdrawals contributing to harm to the resource. Identification of these areas do not imply that harm will or will not occur, but instead provides guidance on the level of possible risk that may result from future ground water withdrawals and identifies where additional research efforts should be focused.

The examination of the surface water resources within the southern KB Planning Area focused on a determination of the availability of supplies from the Lake Istokpoga-Indian Prairie Basin. The analysis performed indicates that current supplies from Lake Istokpoga and surface water runoff in the Indian Prairie Basin are insufficient, under the current management/operation schedule, to meet the projected 2020 1-in-10 drought demands for water. The analysis further demonstrates that the combined uses of Lake Okeechobee and Lake Istokpoga are available to meet the projected 2020 demands. The

use of these sources, however, may require the construction of additional infrastructure to move water where needed.

While the long-term, the 20-year continued increased use of the Floridan aquifer is in question for southern Orange County and northern Osceola County, the immediate, short-term use of the Floridan is expected to continue. The recommendations of this plan that address continued water use in the northern portion of the basin focus on additional data collection and investigation into the options of reclaimed water, storm water, water conservation and surface water use feasibility. Three strategies are developed under this plan to address the future water supply issues in the Orange-Osceola County Area. These include the following:

- Recharge to the Floridan aquifer (through application of reclaimed water and stormwater)
- Demand reduction (through water conservation)
- Optimized use of the Floridan aquifer and development of alternative sources (through continued testing and modeling of the Floridan aquifer and development of surface water sources)

In the Lake Istokpoga-Indian Prairie Basin, the results of the surface water analysis indicate that the surface water availability during a 1-in-10 drought condition is not adequate to support the projected, 2020 water supply demands. The solution to meeting these projected demands lies in changing the operation/management of Lake Istokpoga and in obtaining additional supplies from Lake Okeechobee, local ground water or use of the Kissimmee River. Additional use of Lake Okeechobee and the Kissimmee River are highly controversial and implementation is contingent upon resolving water quality issues as well as addressing other ongoing projects linked to their restoration efforts. Continued use of Lake Istokpoga and future use of Lake Okeechobee are proposed through development of operational plans that will address the operation of pumps and control structures as well as operational agreements with land owners, tribal rights, water quality discharges, and lake regulation schedules among other items. An assessment is proposed for the Kissimmee River in conjunction with the restoration effort to determine the potential availability of the river as a future supply source.

In total, the KB Water Supply Plan identifies approximately $10.8 million dollars in projects to be completed over the next five years to further investigate and clarify the issues raised during the plan analysis. Local governments and users will play a key role in future implementation of these recommendations. Several of the recommendations in this plan are cost-share projects with local partners while other recommendations require the District to enter into agreements with local land owners. In all of these recommendations, the District anticipates continuing the public participation process to assist in guiding the implementation of the recommendations.